

Phase 1B Report



Coastal and Social Resiliency Initiatives for the Tottenville Shoreline

STATEN ISLAND, RICHMOND COUNTY, NEW YORK

Phase 1B Archaeological Investigation Technical Report

SHPO Project Review Number 15PR00618

Prepared for:

Governor's Office of Storm Recovery
25 Beaver Street
New York, NY

Prepared by:



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Management Summary

SHPO Project Review Number:	15PR00618
Involved Agencies:	Governor's Office of Storm Recovery New York State Homes and Community Renewal's Housing Trust Fund Corporation U.S. Department of Housing and Urban Development
Phase of Survey:	Phase 1B Archaeological Investigation
Location Information	
<i>Location:</i>	Staten Island, New York
<i>Minor Civil Division:</i>	08501
<i>County:</i>	Richmond County
Survey Area	
<i>Length:</i>	Approximately 1,372 meters (4,500 feet)
<i>Width:</i>	Approximately 10 to 20 meters (33 to 66 feet)
<i>Number of Acres Surveyed:</i>	3.5 acres (150,000 square feet)
USGS 7.5 Minute Quadrangle Map:	Arthur Kill
Archaeological Survey Overview	
<i>Number and Interval of Shovel Test Pits:</i>	81 at a 50-foot interval; 12 at a ~6-foot interval; 9 at a variable interval
<i>Number and Size of Units:</i>	0
<i>Vertical Datum:</i>	North American Vertical Datum of 1988 (NAVD88)
<i>Horizontal Datum:</i>	North American Horizontal Datum of 1983 (NAV83)
Results of Archaeological Survey	
<i>Prehistoric Sites Identified:</i>	None
<i>Historic Sites Identified:</i>	None
<i>Sites Recommended for Phase 2/Avoidance:</i>	None
Report Author:	A. Michael Pappalardo, MA Registered Professional Archaeologist 10469 and Elizabeth D. Meade, MA Registered Professional Archaeologist 16353
Artifact Inventory:	Roseanne Quinn
Date of Report:	January 2019
Report Abstract:	No prehistoric or historic archaeological resources. No additional fieldwork recommended.

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A. INTRODUCTION

PROJECT DESCRIPTION

On behalf of the State of New York, the Governor’s Office of Storm Recovery (GOSR)—serving under the auspices of the New York State Homes and Community Renewal’s Housing Trust Fund Corporation, and acting under authority of the U.S. Department of Housing and Urban Development’s (HUD) regulations at 24 CFR Part 58, and in cooperation with other involved, cooperating, interested agencies—is proposing initiatives (Proposed Actions) intended to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of Staten Island, NY (see **Figure 1**). These initiatives include the Living Breakwaters Project (“Breakwaters Project”) and the Tottenville Shoreline Protection Project (“Shoreline Project”). The on-shore area proposed for the Shoreline Project is the subject of this Phase 1B archaeological survey. With the exception of a small portion of the Shoreline Project proposed within an unbuilt portion of the New York City Department of Transportation (NYCDOT) Surf Avenue right-of-way, all Shoreline Project components would be constructed within the boundaries of Conference House Park. The Shoreline Project would be located in close proximity but outside of the mapped boundaries of the Ward’s Point Archaeological Conservation Area, an archaeological historic district that is listed on the National Register of Historic Places and is also a National Historic Landmark.¹

The Shoreline Project has been designed to respond to the changing character of the shoreline between approximately Carteret Street and Page Avenue. These include a series of shoreline risk reduction measures, including an earthen berm, a hybrid dune/revetment system, eco-revetments (one section between Brighton Street and Manhattan Street, and one section between Loretto Street and Sprague Avenue), raised edge (revetment with trail), wetland enhancement, and shoreline plantings. ADA-accessible pathways, access points, and overlooks would be constructed along the shoreline protection system (see **Figure 2**). The project elements will wind through the Project Area from approximately 200 feet west of the intersection of Swinnerton Street and Billop Avenue and continue along the shoreline a distance of about 5,000 feet eastward to just east of the southern terminus of Page Avenue. These areas within the Shoreline APE are considered in this Phase 1B Survey.

The implementation of the Proposed Actions was subject to review under the National Environmental Policy Act (NEPA) and the New York State Environmental Quality Review Act (SEQRA) and their implementing regulations. The Joint Record of Decision and State Environmental Quality Review Act (SEQRA) Findings Statement (Joint ROD and Findings Statement) was issued in August 2018, and documents GOSR’s findings and decision to proceed with the Proposed Actions as described in the Final Environmental Impact Statement (FEIS) for the Coastal and Social Resiliency Initiatives for Tottenville Shoreline (June 2018). As described in the Joint ROD and Findings Statement, a Phase 1B archaeological investigation was recommended for those areas of archaeological sensitivity (identified in the Phase 1A study conducted for the Proposed Actions) that will be impacted by the Proposed Actions.

¹ The boundaries of the conservation area are not reproduced in this report to protect known locations of archaeological sensitivity.

INVOLVED AGENCIES AND CONSULTING PARTIES

The Proposed Actions will involve federal, state and local approvals. The Federal, State, and City agencies involved in the environmental review and permitting process for the Proposed Actions include: United States Environmental Protection Agency (USEPA), United States Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration/National Marine Fisheries Service (NOAA/NMFS), U.S. Fish and Wildlife Service (USFWS), Federal Emergency Management Agency (FEMA), US Coast Guard, New York State Department of Environmental Conservation (NYSDEC), New York State Department of State (NYSDOS), New York State Office of General Services (OGS), New York State Office of Parks, Recreation and Historic Preservation (OPRHP), New York City Mayor's Office of Environmental Coordination (MOEC), New York City Mayor's Office of Sustainability, New York City Mayor's Office of Recovery and Resiliency, New York City Department of Parks and Recreation (NYC Parks), New York City Department of City Planning (NYCDCP), New York City Department of Transportation (NYCDOT), New York City Public Design Commission, New York City Department of Environmental Protection (NYCDEP), and New York City Landmarks Preservation Commission (LPC).

Due to the involvement of federal agencies, the Proposed Actions are subject to Section 106 of the National Historic Preservation Act of 1966. In May 2013—following the damage caused by Superstorm Sandy and the plans to redevelop damaged areas—a Programmatic Agreement (PA) was executed among FEMA, New York State Historic Preservation Office (SHPO), the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and ACHP. This PA ensures that Federal disaster assistance programs in the State of New York are administered in accordance with certain stipulations to satisfy FEMA's Section 106 responsibilities. Other Federal agencies providing financial assistance for the type of disaster assistance programs covered by the Agreement may—with the concurrence of ACHP, FEMA, and SHPO—satisfy their Section 106 responsibilities by accepting and complying with the terms of the Agreement. Appendix D to the PA specifically addresses the effects of undertakings and Section 106 responsibilities for the Community Development Block Grant-Disaster Recovery Funds (CDBG-DR) program for activities in New York City.

B. CURRENT CONDITIONS

The proposed Shoreline Project would be constructed along the southern shore of Tottenville, in a beachfront area that is adjacent to residential neighborhoods. The Shoreline Project would be located south of the mapped line of Surf Avenue, which has not been fully constructed across its entire mapped width. As such, portions of the Shoreline APE extend across sandy beach while others include grassy lawns, paved areas, and wooded areas. Pathways lead to the beach from the termini of most of the streets within the residential neighborhoods to the north of the Shoreline APE. Because of the extensive erosion that has altered the water line in this area, decomposing remnants of historic piers and waterfront structures are located along the beach in the vicinity of the proposed Shoreline APE. In some locations, modern pier walls have been constructed along the waterfront to prevent flooding and erosion and the remnants of historic pier walls are visible in some areas along the beach.

C. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS WITHIN THE PROJECT SITE VICINITY

1997 PHASE 1A STUDY OF CONFERENCE HOUSE PARK

In November 1997, archaeologist Arnold Pickman completed an extensive Phase 1A Archaeological Documentary Study of Conference House Park, including the majority of the current Project Site (Pickman 1997). This extensive report covered the 227-acre park in its entirety and assessed the archaeological sensitivity of the majority of the landward portion of the Ward's Point area. Pickman researched the park's prehistoric and historic period occupation and provided a thorough summary of the park's development, and also included census and historic deed research to document the area's historic owners and occupants. In the vicinity of the current Project Site, the report concluded that, with the exception of one small area, the entire beachfront area of Conference House Park along the Raritan Bay—including the now-submerged Ward's Point—was not archaeologically sensitive due to extensive erosion caused by tidal action. Pickman identified a small area of moderate archaeological sensitivity along the waterfront between a mapped—but not constructed—road referred to as “Low Street” and Page Avenue. Historic topographical maps identified this area as an elevated knoll and Pickman determined that it may therefore not have been subject to the same destructive tidal action that formed and re-shaped the beaches elsewhere along the Raritan Bay waterfront. Pickman identified areas of high archaeological sensitivity within the Ward's Point Archaeological Conservation Area—the upland bluffs that line the shores of the Arthur Kill, northwest of the Shoreline APE.

PHASE 1A ARCHAEOLOGICAL DOCUMENTARY STUDY RELATED TO THE SHORELINE PROJECT

During the initial environmental review process, LPC issued a comment letter on February 9, 2015 requesting that a Phase 1A Archaeological Documentary Study of the Shoreline APE be prepared to assess the site's potential to contain archaeological resources associated with the prehistoric occupation of the area. In a comment letter dated August 20, 2015, SMCBM, stated that they wished to serve as a consulting party for the projects and that they concurred with the proposed draft Scope of Work for the DEIS. SMCBM also provided a “Policy for Treatment and Disposition of Human Remains and Cultural Items that May be Discovered Inadvertently During Planned Activities” and requested that the protocols outlined therein be incorporated into any archaeological testing plans prepared in the future. Comments were not received from the other Tribal Nations at that time, although the Delaware Tribe of Indians expressed their intention to review the draft Phase 1A study.

The final version of the Phase 1A was submitted to SHPO, LPC, and the Tribal Nations for review and comment in May 2017¹. The study documented the development history of the Shoreline APE as well as its potential to yield archaeological resources dating to either the prehistoric or historic periods. In addition, the Phase 1A Study documented the current conditions of the Shoreline APE and summarized previous cultural resource investigations which have been undertaken in the vicinity. In a comment letter dated May 20, 2017, LPC concurred with the final Phase 1A study and subsequently approved the language in the FEIS in a comment letter dated June 20, 2018.² SHPO similarly concurred with the

¹ AKRF, Inc. (May 2017): “Phase 1A Archaeological Documentary Study: Coastal and Social Resiliency Initiatives for the Tottenville Shoreline: Living Breakwaters and Tottenville Shoreline Protection Projects; Staten Island, Richmond County, New York.” Prepared for the Governor's Office of Storm Recovery; New York, NY.

² LPC's comment letter included specific comments regarding archaeological testing in the location of the proposed Water Hub; as the Water Hub is not part of the Shoreline Project, it is not relevant to this Phase 1B Archaeological Testing Protocol/Work Plan.

conclusions of the final Phase 1A Study in a comment letters dated June 7, 2017 and June 20, 2018. The conclusions of the final Phase 1A Study were accepted by SMCBM in comments transmitted May 30, 2017; by the Delaware Nation in comments transmitted on May 30, 2017; and by the Delaware Tribe of Indians in a comment letter dated June 15, 2017. All three Tribal Nations submitted specific comments regarding the archaeological testing that have been incorporated into the Phase 1B Archaeological Testing Protocol/Work Plan prepared in advance of the testing (see below). No comments were received from the other Tribal Nations consulted for this project.

PHASE 1B ARCHAEOLOGICAL TESTING PROTOCOL/WORK PLAN

In October 2018, AKRF prepared a Phase 1B Archaeological Testing Protocol/Work Plan summarizing the proposed testing strategy that would be followed during the Phase 1B field effort. The plan was submitted to LPC, SHPO, and the Tribal Nations for review and comment. In a comment letter dated October 24, 2018 and in comments submitted through CRIS on November 20, 2018, LPC and SHPO, respectively, concurred with the testing protocol and requested minor modifications to the testing strategy. In comments transmitted by email on November 1, 2018, the Stockbridge-Munsee Community also concurred with the testing protocol. Comments were not received from other Tribal Nations to whom the work plan was submitted. The work plan was revised in November 2018 and resubmitted to the consulting parties and in comments dated November 20, 2018, LPC and SHPO each concurred with the final protocol.

D. ARCHAEOLOGICAL TEAM

The Phase 1B Archaeological Investigation within the Shoreline APE was supervised by Elizabeth D. Meade (MA, MPhil, Registered Professional Archaeologist (RPA) #16353), who served as the Principal Investigator and Laboratory Director. The Field Director was A. Michael Pappalardo (MA, RPA #10469). Mr. Pappalardo oversaw a crew of field technicians. Both Ms. Meade and Mr. Pappalardo exceed the requirements for the professional qualifications standards for archaeologists as defined by the Secretary of the Interior (36CFR61)¹ and comply with the codes and standards outlined by the RPA.²

¹ https://www.nps.gov/history/local-law/arch_stnds_9.htm

² <https://rpanet.org/page/CodesandStandards>

A. RESEARCH GOALS

The objectives of this Phase 1B Archaeological Investigation within the Shoreline APE were to (1) ascertain the presence or absence of prehistoric or historic period archaeological deposits within the undisturbed portions of the site; and (2) to determine the significance of any resources that are recovered. The determination of significance is largely dependent on the types of potential archaeological resources that could be encountered within the Shoreline APE and on the specific research questions that can be answered through the analysis of those resources. The types of archaeological resources that were expected to be present within the Shoreline APE and the potential research questions/research goals that could be answered by this Phase 1B Archaeological Investigation are described below.

POTENTIAL ARCHAEOLOGICAL RESOURCES

As described in the previous chapter, the Phase 1A Study determined that undisturbed portions of the site have moderate sensitivity for archaeological resources dating to both the prehistoric and historic periods. Potential archaeological resources that would be expected to be present within the Shoreline APE are described below.

PREHISTORIC ARCHAEOLOGICAL RESOURCES

Portions of the Shoreline APE are in the immediate vicinity of the Ward's Point Archaeological Conservation Area ("the Conservation Area") and could provide information on Native American ways of life in southwestern Staten Island. The archaeological historic district, which is listed on the National Register of Historic Places and is National Historic Landmark, comprises at least eight individual sites, and mapped locations of sites linked to or associated with Ward's Point extend further to the south and east, overlapping with the Shoreline APE (Boesch 1994). The sites within the Conservation Area were initially identified and excavated by avocational archaeologists, and may have been first discovered during basement excavations in 1858 and again in 1863 (Florance 1982). The area was more extensively investigated by groups representing the Natural Science Association and the American Museum of Natural History between the mid-19th and early-20th centuries (ibid). Additional amateur excavations and accidental finds continued within the area through the mid-20th century, with more modern, professional excavations taking place in the 1960s through the 1980s, most notably by Jerome Jacobson in the 1960s and by Shirley Zavín and Sherene Baugher between 1979 and 1980 (ibid). The Ward's Point Conservation Area contains archaeological resources dating to between the Early Archaic and Contact Periods (Cantwell and Wall 2001) that were determined significant as a repeatedly occupied encampment and the transition of the Native American population from the stone tools of the Early Archaic to the composite tools made with European goods that were seen in the Contact period (ibid).

The Conservation Area has already contributed greatly to the archaeological record of the region and also possesses significant archaeological potential. However, the area has been the subject of few modern archaeological investigations. As such, if prehistoric archaeological resources are recovered from the areas likely to be affected by the Proposed Actions within the Shoreline APE, using modern standards for the collection of data and documentation of sites, they can be compared and contrasted with artifacts

recovered from sites elsewhere in the northeastern United States to provide new insight into the prehistoric occupation of Staten Island and possibly its transition into European settlement.

HISTORIC PERIOD ARCHAEOLOGICAL RESOURCES

Portions of the Shoreline APE are also considered to be sensitive for historic period archaeological resources such as domestic shaft features (e.g., privies, cisterns, and wells) used for water gathering and sanitation in the historic lots' rear yards and trash middens. These types of archaeological resources can provide insight into the daily lives and activities of the individuals who lived and worked within the Shoreline APE in the historic period. Privies—the shaft features constructed beneath outhouses—are typically expected to be located at the rear of the historic property while wells and cisterns are typically located closer to a dwelling. In addition to the domestic shaft features referenced above, historic features can include paving/drainage stones, retaining walls, trash middens, foundations of buildings and outbuildings such as barns, stables, storage sheds, etc. Trash middens would be expected to be in the vicinity of historic homes or at the perimeters of historic properties.

B. PHASE 1B ARCHAEOLOGICAL TESTING METHODOLOGY

Although documentary research determines archaeological potential, Phase 1B archaeological testing is required to determine if resources are *actually* present on a site. The Phase 1B Archaeological Investigation was conducted in accordance with LPC's "Guidelines for Archaeology work in New York City," issued in 2018,¹ the standards for Historic and Cultural Resources analyses as specified in the *CEQR Technical Manual* as amended in 2014,² the "Phase 1 Archaeological Report Format Requirements" as issued by SHPO in 2005,³ and the "Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State" as issued by the New York Archaeological Council (NYAC) in 1994 and adopted by SHPO in 1995.⁴

PHASE 1B FIELDWORK

Fieldwork consisted of a reconnaissance walkover survey of the entire project site to make and document observations regarding the ground surface and subsurface testing in areas determined to have archaeological potential in the Phase 1A Study that are likely to be affected by the Proposed Actions. Subsurface testing occurred along the general path of the proposed Shoreline Project elements indicated as a red dashed line on **Figure 2**. This testing area can be divided into two general portions: 1) the large, wooded, rectangular area located south of Billop Avenue and west of Brighton Street and 2) the long, narrow area that extends along the coastline to the east. Most subsurface testing occurred in the large, wooded, rectangular area. The large rectangular area was investigated through the excavation of test pits established along a 50-foot-interval grid, with a small number of closer-interval pits in an area where a possible prehistoric artifact was recovered. Only a small number of judgmentally established test pits were excavated along the coastline to the east due to the generally disturbed ground surfaces in this area, as per the Phase 1B Testing Protocol.

The coordinates for each test location in the 50-foot-interval grid were based on a local datum point located at the center point of Swinnerton Street where it intersects with the south side of Billop Avenue.

¹ <http://www.nyc.gov/html/lpc/downloads/pdf/pubs/ayguide.pdf>

² http://www.nyc.gov/html/oec/downloads/pdf/2014_ceqr_tm/09_Historic_Resources_2014.pdf

³ <http://parks.ny.gov/shpo/environmental-review/documents/PhaseIReportStandards.pdf>

⁴ <http://nyarchaeology.org/wp-content/uploads/2013/12/NYACStandards.pdf>

Test locations along the coastline were mapped using large-scale project design maps based on their distance from the nearest street.

As all testing for the Phase 1B investigation occurred within the boundaries of Conference House Park, NYC Parks required permits and approvals prior to commencing fieldwork.

No testing was proposed or completed in visibly disturbed areas, paved areas, areas characterized by sandy beach or wetlands, and locations where no impacts would occur as a result of the Proposed Project as shown on recent project plans (although a small number of test pits were inadvertently excavated over 100 feet west of the project limits and only a narrow portion of the large, wooded area will be impacted by the proposed construction). As such, the area that was tested represents the area that is expected to be impacted by the proposed project as defined by current project plans and is smaller than the previously-defined APE that was identified before project design commenced.

Each test pit was approximately 16 to 18 inches in diameter and excavated to a depth of 1.5 to two feet. Test Pits were excavated in natural stratigraphic levels. In pits where potential prehistoric artifacts were recovered along the 50-foot-interval grid, additional pits were excavated at closer intervals around the first positive shovel test location—at between 3 and 10 feet north, south, east, and west, dependent upon mature trees or soil disturbance—to determine the presence or horizontal and vertical extents of potential artifact deposits. All excavated soils were screened with quarter-inch mesh hardware. All artifacts recovered through screening were placed in labeled plastic bags according to stratigraphic level.

LABORATORY PROCESSING

Archaeologists cleaned, stabilized, and inventoried the small number of artifacts removed from within the Shoreline APE. The artifact assemblage was transported to the AKRF archaeological laboratory following the completion of the fieldwork, where the collection is still housed. All laboratory activity was conducted in compliance with the aforementioned guidelines and with those established by the United States Department of the Interior/National Park Service for the Curation of Federally-Owned and Administered Archaeological Collections (36 *CFR* 66 and 79). Artifact washing began immediately after transfer of the collection to the laboratory. A trained technician processed the artifacts using standard archaeological techniques. Artifacts were washed with a mild, non-ionic detergent using soft-bristle brushes and after washing they were air-dried on perforated racks. Fragile artifacts and those with non-stable surfaces were washed separately without brushing as appropriate. Artifact bags were labeled in waterproof ink with all relevant provenience information. After they were cleaned and dried, the artifacts were placed in archivally stable polyethylene zip-lock bags for permanent storage. The provenience information was written on the outside of the bags using a permanent, waterproof marker.

An artifact inventory recording the depth and location of each recovered artifact was created. As the assemblage consisted almost entirely of highly fragmentary modern or recent historic remains, little additional analysis beyond identification to material and type was conducted. The original form and function of most artifacts was impossible to determine. The field team also collected a few stone artifacts thought to be possible prehistoric artifacts. These items were sorted according to material and basic attributes.

The Phase 1B Archaeological Investigation within the Shoreline APE consisted of a reconnaissance walkover survey, subsurface testing, and examination of the small number of recovered artifacts. **Appendix A** provides the Excavation Record and **Appendix B** provides the Artifact Catalogue. The results of each component of this investigation are summarized below.

A. RESULTS OF RECONNAISSANCE WALKOVER SURVEY

Prior to the initiation of subsurface testing, the field team completed a reconnaissance walkover survey of the entire Shoreline APE. The large, wooded, rectangular area located south of Billop Avenue and west of Brighton Street is level and generally covered with brush and trees (see **Photographs 1** through **5** and **Figures 3a** and **3b** for photo locations). Elevations in this area range from 9 feet in the northwest corner to 5 feet (NAV88) closer to the shore. As indicated in **Photographs 1** and **2**, concrete pads and construction debris are present in portions of this area, particularly along the west side. These remains are associated with ground surface disturbance and appear to be a combination of discarded debris from past roadway construction and the remains of unidentified demolition. According to the Phase 1A study, there has been sporadic development throughout the area over the past decades, including the construction of no longer present roads. **Photographs 3** and **5** show areas where roadways once extended through this portion of the APE towards the coastline (these roads also appear on historic maps and were mentioned by older area residents who spoke to the field crew). As indicated in **Photograph 4**, standing water was present across portions of this area during the field effort, likely due to the poorly-drained clayey soils and recent rains.

No potential features or historic resources were observed during the walkover of the large, wooded, rectangular area located south of Billop Avenue though a variety of household trash items and food and beverage containers are present. Dense residential development is present directly to the north of this area and the refuse is likely associated with that population and the active use of the coastline by area residents.

The long but narrow portion of the APE that extends along the coastline to the east is depicted in **Photographs 6** through **18**. As seen in these photos, the coastline consists of a sandy beach, a bulkhead wall or substantial riprap of boulders and concrete, and either a level vegetated area or manicured lawn established on fill. According to map analysis included in the Phase 1A, the coastline along this area has been significantly modified by erosion and subsequent erosion control efforts. **Photographs 6, 9, and 15** depict areas where less disturbed ground surfaces were observed and where judgmental subsurface testing was conducted. Areas consisting entirely of sand (**Photograph 8**), covered with riprap (**Photograph 9**), or buried beneath substantial quantities of fill (**Photograph 10**), were not targeted for subsurface testing and constitute the majority of this portion of the APE.

No potential features or historic resources were observed during the walkover along the coastline portion of the APE. However, evidence of the coastline's long period of active use is amply present in the form of walkways, curbs, walls, fences, and steps. No evidence of shaft features such as wells was observed.

B. RESULTS OF SUBSURFACE TESTING

The field team excavated a total of 102 test pits during the month of November, 2018 and collected 189 artifacts from 28 of those pits (the location of each test pit is depicted on **Figures 3a** and **3b**; see **Appendix A** for the Excavation Record and **Appendix B** for the Artifact Catalogue). Modern refuse was observed but not collected from most test pits. The artifacts consisted of a limited range of fragmented modern or non-diagnostic refuse such as bottle and window glass, ceramics (primarily utilitarian redwares such as those used for flower pots), plastics, mollusk shells (which would be expected to be common in the area as a result of coastal flooding and distribution as a result of animal behavior), and a small number of lithics that were collected due to the possibility that they were prehistoric artifacts. Subsection 3.B provides a summary of the collected artifacts.

The coordinates for each test location in the 50-foot-interval grid were based on a local datum point located at the center point of Swinnerton Street where it intersects with the south side of Billop Avenue. Test locations along the coastline were named S1 through S9 and were mapped using large-scale design maps based on their distance from the nearest street. The results of testing in each of the two test areas is provided below.

RESULTS OF TESTING ALONG 50-FOOT-INTERVAL GRID WITHIN RECTANGULAR WOODED AREA

Within the large, rectangular, wooded portion of the APE located south of Billop Avenue and west of Bighton Street, subsurface testing consisted of 81 test pits excavated along a 50-foot-interval grid. An additional 12 test pits were also excavated in this area at a tighter interval of 5 to 10 feet to investigate a location where the field team recovered a possible prehistoric lithic artifact (see **Figures 3a** and **3b**). The stratigraphy in this area generally consisted of a few inches of very dark brown to black (10YR 2/2 to 10YR 2/1) humus with leaf litter, a dark brown to dark yellowish brown (10YR 3/3 to 4/6) top soil which extended to 10 to 12 inches below grade, followed by a lighter yellowish brown to reddish brown (10YR 4/6 to 7.5YR 4/6) subsoil. Soils ranged from poorly-drained clayey loam along the northern half and western third of this portion of the APE to well-drained deposits of coarse beach sands to the south, closer to the shoreline.

Several test pits encountered dense and compacted gravels, evidence of the former extension of Swinnerton Street through the APE and actively maintained walking trails. Other disturbances included redeposited soils, layers of fill, and drainage channels. The field team observed standing water in the northeastern quadrant of this area. The water appeared to have accumulated due to high clay content in the soils and recent rain. The test pits excavated in the vicinity of standing water generally filled with water quickly after excavation to a depth of several inches below grade.

RESULTS OF TESTING ALONG COASTLINE

Despite the long length of the coastline portion of the APE, only nine test pits were excavated in this area. The majority of the coastline has been extensively disturbed either through erosion or erosion remediation efforts, or through construction of sea walls, riprap, or landscaped lawns. These nine test pits were judgmentally established in four discrete locations hundreds of feet apart thought to have a better likelihood of intact soil stratigraphy (**Figure 3a**). Perhaps due to the aforementioned disturbances, the soils across this area were more variable and disturbed than the wooded area discussed above. Soils ranged from coarse sandy fill with concrete and demolition debris to the west (S1 and S2), to sandy loam and clayey loam along the central portion (S3 and S4), to loose sandy loam or clayey loam at the eastern end.

C. RESULTS OF ARTIFACT ANALYSIS

Subsurface testing resulted in the collection of 189 artifacts though many additional modern items such as packaging material, food and beverage containers, and architectural debris were observed but not collected. **Table 1** below provides a general breakdown of the assemblage of collected artifacts by basic artifact type and the Artifact Catalogue is provided as **Appendix B**.

Table 1
Artifact Counts by General Type

Artifact Type	Description	Count
Household Glass	Bottle/Curved	35
	Window/Unident	59
Household Ceramics	Buff earthenware	2
	Coarse earthenware	2
	Ironstone	1
	Redware	29
	Whiteware	7
Metal	Nail	1
	Unident	2
Mollusk Shell	Clam	6
	Oyster	8
	Unidentified	17
Plastic	Misc.	15
Lithic	Possible flake	3
	Possible shatter	2
Total:		189

The subsections below provide summaries of the collected material organized by whether it dated to the historic or modern period or was possibly prehistoric.

HISTORIC/MODERN ARTIFACTS

Fragmentary historic/modern artifacts were observed in low concentrations across essentially the entire area likely to be affected by the Proposed Actions within the Shoreline APE. A total of 180 historic/modern artifacts were collected from the over 150,000-square-foot area tested with a 50-foot-interval grid and four artifacts were recovered from test pit S8, which was excavated about 400 feet west of Page Avenue in the coastline portion of the Shoreline APE. No artifacts were recovered from the other eight test pits excavated in this area. The most frequently encountered material was glass, which comprised almost half of the assemblage. Most of this was window glass or unidentifiable flat glass and about 30 percent of which were likely from small bottles such as beer or soda bottles.

The next most frequently collected artifact type was ceramic, of which almost 70 percent of which were utilitarian redware flower pot fragments. The small number of additional ceramics consisted of earthenware, ironstone, and seven fragments of whiteware. None of the ceramics were large enough to provide a date of manufacture or to identify the form or function of the original vessel. Though not collected, the field team observed fragmentary architectural debris such as brick, concrete, and paving material in many test pits. This material appeared to be associated with surficial evidence of dumping or recent construction activity and had no research value.

The distribution of historic/modern artifacts appears to be associated with the gradual deposition of household refuse on the ground surface related to the adjacent residential community and the active use of the coastline by area residents. The artifacts were not associated with identifiable archaeological features and have no research value.

The field team also collected a number of mollusk shells. The collected mollusk shell are almost certainly associated with bird and animal activity or coastline flooding episodes due to their low density and their prevalence in pits excavated closer to the coastline.

POSSIBLE PREHISTORIC ARTIFACTS

Based on work previously completed by other archaeologists and summarized in the Phase 1A Documentary Study, portions of the Shoreline APE were identified as sensitive for the presence of prehistoric archaeological resources. Accordingly, the field team was particularly attentive to lithic materials that could be indicative of prehistoric activities related to tool making or use.

Possibly prehistoric lithic artifacts were recovered from two of the test pits excavated along the 50-foot-interval grid investigated in the western portion of the Shoreline APE: a single possible jasper flake from STP W200/S0, which is located at the northwestern corner of the proposed Shoreline Project; and a single possible chert flake from STP W300/S100, which is located over 200 feet west of and outside of the Shoreline Project western limit. Tighter interval testing around STP W200/S0 (see **Photograph 19** and **Figure 3b**) led to the recovery of three additional possible prehistoric artifacts 25 feet to the south. The other nine tighter interval test pits excavated in this area were sterile as were the adjacent test pits excavated at a 50-foot interval. As stated above, STP W300/S100 was excavated 200 feet west of the western edge of the Shoreline Project western limit. Since this area will not be affected by the Proposed Actions, no tighter interval testing was completed around STP W300/S100.

The possible jasper flake recovered from STP W200/S0 was 2 to 3 cm long, had possible flake scars on its dorsal face, but no bulb of percussion. If the flake is cultural, it could only be considered a flake fragment (the distal end). However, it was recovered close to the ground surface and fragments of modern beer bottle glass were found in a lower soil level. The location is bound to the north by both the edge of the proposed Shoreline Project and Billop Avenue and to the west by both the edge of the western limit of the proposed Shoreline Project and an area of ground surface disturbance and concrete pads (**Photograph 2**). During excavation of 12 additional tighter-interval test pits in the vicinity of STP W200/S0 the field team collected three additional possible prehistoric artifacts: two pieces of possible shatter in STP W200/S25 and a small possible flake in STP W205/S25. The two pieces of possible shatter were both chert and 2 to 3 cm long, irregularly shaped, and had no apparent cortex. If cultural, they may have been created during the experimental smashing of a larger piece of chert to determine its quality as a potential core. The small possible flake recovered from STP W205/S25 was also chert, only 0.5 to 1 cm long and had no flake scars, striking platform, or bulb of percussion. It is highly likely that this small chip of stone formed naturally.

The single small chert flake recovered from STP W300/S100 (well outside of the Shoreline Project area) was 1 to 2 cm long, irregular on both faces, and had no bulb of percussion or striking platform. Though this flake was missing any identifiable flake attributes it was saved due to the fact that it was the only piece of chert observed in this area. **Table 2** below provides a summary of this small assemblage of possible prehistoric artifacts.

Table 2
Description of Possibly Prehistoric Artifacts

STP	Type	Material	Description	Count
W200/S0	Possible flake	Jasper	This chip of jasper was 2 to 3 cm long, had possible flake scars on its dorsal face, but no bulb of percussion. If it is cultural it may be a flake fragment. However, it was recovered from a disturbed context.	1
W200/S25	Possible shatter	Chert	Irregularly-shaped, blocky pieces of chert. Both are 2 to 3 cm in length and likely fractured naturally.	2
W205/S25	Possible flake	Chert	This small flake is 0.5 to 1 cm long and has no flake scars or bulb of percussion.	1
W300/S100	Possible flake	Chert	This possible flake is 1 to 2 cm long, irregular on both faces, and has no bulb of percussion. It is likely natural and was recovered well outside of the Shoreline Project limits.	1
Total:				5

Though both chert and jasper were preferred lithic raw materials for toolmaking on Staten Island during prehistory, none of these remains were unambiguously byproducts of the intentional working of a stone nodule to create or maintain a tool, an activity which can lead to the deposition of large quantities of lithic debitage. It is more likely that these items formed naturally during the seasonal freezing and thawing cycle and natural churning of the project area's stratigraphy. During excavation of the dozens of test pits in this large wooded area, bounded immediately to the south by the dynamic coastline, the archaeologists frequently encountered dense gravelly soils. These gravelly layers often included small quantities of jasper and chert pebbles or gravels, which naturally occur in the vast outwash plain that formed across southern Staten Island with the retreat of the last Wisconsin Stage glacial sheet. Even in the unlikely event that some or each of these items was created as a result of intentional prehistoric activity, given their very low concentration and limited spatial extent, they would be considered isolated finds and not a potentially significant archaeological site. In addition, the small area in which the few lithic artifacts were recovered is also the site of modern soil disturbance and clearly bound by the northern and western edges of the Shoreline Project limits and pits containing no prehistoric materials to the south and east.

A. CONCLUSIONS

AKRF completed a Phase 1B Archaeological Investigation within the portion of the Shoreline APE that would be impacted by the proposed project as shown on recent project plans in order to determine the presence or absence of archaeological resources that could be affected by the project. The survey consisted of the excavation of 102 shovel test pits, of which 81 were excavated in a 50-foot-interval grid established across the large, wooded portion of the APE, twelve were excavated at a tighter interval to examine the location where a possible prehistoric artifact had been recovered, and nine were excavated judgmentally at a variable-length interval along the long coastline portion of the APE. The survey resulted in the recovery of 189 artifacts: five possible prehistoric lithic artifacts; 31 mollusk shells; 15 pieces of plastic packaging material (though much more was observed and not collected); and 138 fragmented and non-diagnostic residential household items such as dish fragments, bottle glass, and other miscellaneous items.

The distribution of historic/modern artifacts appears to be associated with the gradual deposition of household refuse on the ground surface related to the adjacent residential community, the former partial development of the Shoreline APE, and the on-going active use of the coastline by area residents. The artifacts were not associated with identifiable archaeological features and have no research value. Despite being characterized as possible lithic artifacts in this report, the small collection of fragments of chert and jasper lack many of the basic diagnostic attributes of debitage and are more likely the non-cultural product of natural forces such as seasonal freezing and thawing than the remains of the intentional production or maintenance of stone tools during prehistory. However, even if they are cultural, the location where the field team recovered these remains is bound to the north and west by the edges of the Shoreline Project limits, is located in an area of previous soil disturbance, and is bound to the south and east by sterile test pits. Furthermore, the small assemblage lacks research value and is not considered archaeologically significant.

B. RECOMMENDATIONS

Based on the absence of significant artifact deposits or sensitive archaeological features no additional fieldwork is recommended.

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Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report

New York State Historic Preservation Office

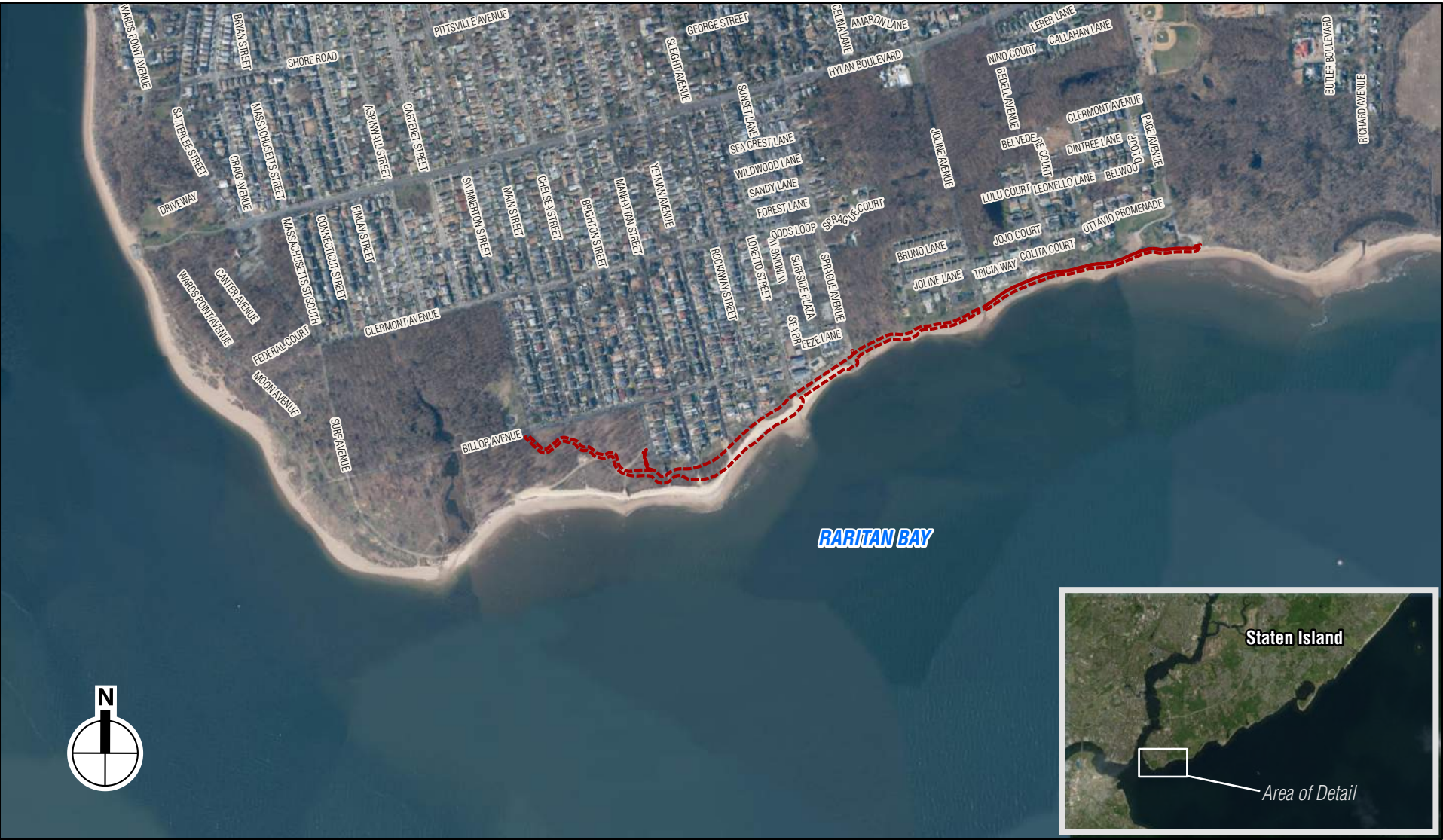
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Figures





----- Proposed Shoreline Project Elements




0 1,000 FEET



Project Location

Figure 2



-  Photo View Direction and Reference Number
 Test Pit with Possible Prehistoric Artifact
 <all other values>
 a Local Datum; NAVD88, 8 feet; LAT/LONG 40.498920, -74.244366

0 500 FEET



Photo View Direction and Reference Number

a Local Datum; NAVD88, 8 feet; LAT/LONG 40.498920, -74.244366



Test Pit with Possible Prehistoric Artifact



Test Pit

(E500/S150) *Map Coordinates*

Test Pit Locations and Photo Locations

Photographs





Facing southwest from Billop Avenue at west end of APE showing concrete pad and roadway guardrail

1



Facing southeast from western end of APE showing concrete pads and roadway debris

2



Facing north from former southern terminus of Swinnerton Street towards intersection of Swinnerton and Billop Avenue

3



Facing northwest from south of Billop Avenue showing excavation of a test pit in an area with surficial water accumulation

4



Facing south from southern end of Main Street at Billop Avenue showing former extension of Main Street towards the shoreline

5



Facing east from east side of Sprague Avenue. Shovel test pits S3 and S4 were excavated a couple hundred feet beyond this area

6



Facing east showing the shoreline to the east of Sprague Avenue

7



Facing west along the shoreline between Sprague and Joline Avenues showing area of recently built up shoreline. Shovel test pits S3 and S4 were excavated in the grasses beyond the built up area

8



Facing east along the shoreline between Sprague and Joline Avenues showing area of recently built up shoreline. Shovel test pits S5 and S6 were excavated in the grasses to the right

9



Facing east from the southern end of Joline Avenue showing filled-in lawn, retaining wall and substantial rip rap, and modified shoreline

10



Facing west towards the southern end of Joline Avenue showing substantially modified shoreline 11



Facing southwest from southern end of Bedell Avenue showing filled-in lawn and substantial rip rap 12



Facing west along shoreline from south of Bedell Avenue. Note cobble and concrete retention wall and poured concrete platform

13



Facing northwest from shoreline west of Page Avenue

14



Facing northwest from west of Page Avenue showing overgrown lot with a few mature trees. Shovel test pits S8 and S9 were excavated in this area **15**



Facing northwest from west of Page Avenue **16**



Facing west along shoreline from south of Page Avenue 17



Facing northwest from shoreline showing newly constructed gravel parking area east of Page Avenue 18



Facing north towards Billop Avenue showing tighter interval testing in area of discovery of a possible prehistoric artifact

Appendix A:
Record of Excavation



Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
200W N10	1	AO	0	5	10YR 2/2	Very Dark Brown Sandy Loam Clay	NCM; 10' north of W200 S0; 8' south of existing road; 4.5' south of wood fence
200W N10	2	A	5	16	10YR 3/4	Dark Yellowish Brown Clayey Loam	NCM
200W N10	3	B	16	22	10YR 4/6	Dark Yellowish Brown Silty Loam Clay	NCM; north wall of shovel test contains gravel to the base of excavation; stratigraphy measured in south wall
E100 S0	1	AO	0	3	10YR 3/6	Dark Yellowish Brown Silty Loam	automotive parts, not retained for analysis
E100 S0	2	A	3	14	10YR 3/3	Dark Brown Sandy Silt	NCM
E100 S0	3	B	14	22	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM
E100 S100	1	AO	0	4	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM
E100 S100	2	A	4	17	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E100 S100	3	B	17	21	10YR 3/6	Dark Yellowish Brown Silty Clay Loam	NCM
E100 S150	1	AO	0	5	10YR 2/2	Very Dark Brown Loamy Silty Sand	plastic (NR)
E100 S150	2	A	5	12	10YR 3/6	Dark Yellowish Brown Coarse Sand	NCM; silt
E100 S150	3	B	12	21	10YR 5/6	Yellowish Brown Coarse Sand	NCM
E100 S200	1	AO	0	3	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM
E100 S200	2	A	3	19	10YR 3/6	Dark Yellowish Brown Coarse Sand	NCM
E100 S200	3	B	19	23	10YR 5/6	Yellowish Brown Coarse Sand	NCM
E100 S250	1	AO	0	3	10YR 2/1	Black Loamy Sand	NCM
E100 S250	2	B	3	21	7.5YR 4/6	Dark Yellowish Brown Coarse Sand	NCM; silt
E100 S50	1	AO	0	3	10YR 2/1	Black Sandy Silt Loam	NCM; offset 7' south to avoid roots
E100 S50	2	A	3	15	10YR 3/6	Dark Yellowish Brown Sandy Clay	NCM; root impasse
E150 S0	1	AO	0	9	10YR 3/6	Dark Yellowish Brown Silty Loam	NCM
E150 S0	2	A	9	16	10YR 3/3	Dark Brown Sandy Clay Loam	NCM
E150 S0	3	B	16	22	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM
E150 S100	1	AO	0	3	10YR 2/2	Very Dark Brown Loamy Sand	NCM
E150 S100	2	A	3	11	10YR 4/6	Dark Yellowish Brown Coarse Sand	
E150 S100	3	A	11	20	10YR 4/4	Dark Yellowish Brown Silty Clay	NCM; buried A Horizon
E150 S100	4	B	20	25	10YR 3/6	Dark Yellowish Brown Silty Clay Loam	NCM; water pooling at base of excavation
E150 S150	1	AO	0	3	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM
E150 S150	2	A	3	11	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM; pebbles
E150 S150	3	B	11	19	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E150 S200	1	AO	0	3	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
E150 S200	2	A	3	11	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM; silt
E150 S200	3	B	11	16	10YR 4/6	Dark Yellowish Brown Silty Clay Sand	NCM
E150 S250	1	AO	0	3	10YR 2/1	Black Loamy Sand	
E150 S250	2	A	3	14	7.5YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E150 S250	3	B	14	21	7.5YR 4/6	Dark Yellowish Brown Coarse Sand	NCM; pebbles
E150 S50	1	AO	0	3	10YR 2/2	Very Dark Brown Sandy Silt Loam	NCM
E150 S50	2	A	3	13	10YR 3/4	Dark Yellowish Brown Silty Clay loam	NCM
E150 S50	3	B	13	19	10YR 4/6	Dark Yellowish Brown Sandy Silt Clay	NCM; water saturated
E200 S0	1	AO	0	4	10YR 3/2	Very Dark Grayish Brown Silty Loam	
E200 S0	2	A	4	12	10YR 3/3	Dark Brown Sandy Clay Loam	NCM
E200 S0	3	B	12	21	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM
E200 S200	1	AO	0	3	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM
E200 S200	2	A	3	10	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E200 S200	3	B	10	18	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM
E200 S250	1	AO	0	2	10YR 2/1	Black Loamy Sand	NCM
E200 S250	2	A	2	13	7.5YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E200 S250	3	B	13	19	7.5YR 4/6	Dark Yellowish Brown Coarse Sand	NCM; pebbles; water table at 17" bgs
E250 S100	1	AO	0	3	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM
E250 S100	2	A	3	8	7.5YR 3/4	Dark Brown Silty Sand	NCM
E250 S100	3	B	8	13	7.5YR 4/6	Strong Brown Coarse Silty Sand	NCM
E250 S100	4	C	13	19	7.5YR 4/6	Strong Brown Sandy Clay Loam	NCM; pebble concentration 13-15" bgs
E250 S150	1	AO	0	4	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM
E250 S150	2	A	4	8	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM; silt
E250 S150	3	B	8	21	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM
E250 S50	1	AO	0	3	10YR 2/2	Very Dark Brown Loamy Silty Sand	NCM
E250 S50	2	A	3	14	10YR 4/6	Dark Yellowish Brown Sandy Silt	NCM
E250 S50	3	B	14	20	10YR 4/2	Dark Grayish Brown Silty Clay Loam	NCM
E300 S150	1	AO	0	8	10YR 2/2	Very Dark Brown Silty Clay Loam	shovel test was on west side of dirt road; compact; glass and plastic (NR)
E300 S150	2	A	8	16	7.5YR 4/6	Strong Brown Sandy Silt Clay	NCM; compact with gravels
E350 S150	1	AO	0	4	10YR 2/2	Very Dark Brown Sandy Silt Loam	NCM
E350 S150	2	A	4	9	7.5YR 4/6	Strong Brown Coarse Silty Sand	
E350 S150	3	B	9	13	7.5YR 4/6	Strong Brown Coarse Silty Sand	NCM; water table at 12" bgs; pebbles
E450 S150	1	AO	0	3	10YR 2/2	Very Dark Brown Sandy Silty Loam	

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
E450 S150	2	A	3	9	7.5YR 4/6	Strong Brown Coarse Sand	pebbles
E450 S150	3	B	9	20	7.5YR 4/6	Strong Brown Silty Sand	NCM
E450 S150	4	B	20	24	7.5YR 4/6	Strong Brown Loamy Silt Sand	NCM; water table at 22" bgs
E50 S0	1	AO	0	3	10YR 3/6	Dark Yellowish Brown Silty Loam	
E50 S0	2	A	3	12	10YR 4/3	Dark Yellowish Brown Gravelly Sandy Silt	
E50 S0	3	B	12	17	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM
E50 S100	1	AO	0	4	10YR 2/2	Very Dark Brown Sandy Loam	
E50 S100	2	A	4	18	7.5YR 4/6	Strong Brown Coarse Sand	
E50 S100	3	B	18	23	7.5YR 4/6	Strong Brown Silty Clay	NCM; water saturated
E50 S150	1	AO	0	4	10YR 2/1	Black Sandy Loam	NCM
E50 S150	2	B	4	20	7.5YR 4/6	Strong Brown Coarse Sand	NCM
E50 S200	1	AO	0	8	10YR 2/2	Very Dark Brown Sandy Loam	NCM
E50 S200	2	A	8	11	10YR 4/4	Dark Yellowish Brown Coarse Sand	NCM; pebbles
E50 S200	3	B	11	16	7.5YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E50 S200	4	C	16	24	10YR 3/6	Dark Yellowish Brown Sandy Silt	NCM
E50 S250	1	AO	0	4	10YR 2/1	Black Loamy Sand	NCM
E50 S250	2	A	4	9	5YR 3/4	Reddish Brown Coarse Sand	NCM
E50 S250	3	B	9	20	7.5YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E50 S50	1	AO	0	5	10YR 2/1	Black Silty Loam	NCM
E50 S50	2	A	5	8	10YR 3/6	Dark Yellowish Brown Sandy Silt	disturbed deposit with brick frags (NR) and black 10YR 2/1 loamy sand striations
E50 S50	3	B	8	18	10YR 4/6	Dark Yellowish Brown Silty Clay	NCM
E500 S150	1	AO	0	4	10YR 2/2	Very Dark Brown Sandy Silty Loam	NCM
E500 S150	2	A	4	9	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM
E500 S150	3	B	9	17	7.5YR 4/6	Strong Brown Silty Clay Loam	NCM
E500 S150	4	A	17	27	7.5YR 4/1	Dark Grayish Brown Silty Clay Loam	NCM; buried A Horizon; water saturated
E550 S150	1	AO	0	7	10YR 2/2	Very Dark Brown Sandy Silty Loam	NCM; disturbed
E550 S150	2	A	7	10	7.5YR 5/8	Strong Brown Sandy Silty Clay	NCM
E550 S150	3	B	10	17	7.5YR 4/6	Strong Brown Sandy Silty Clay	NCM
S0 W150	1	AO	0	4	10YR 2/1	Black Sandy Loam	NCM
S0 W150	2	A	4	16	10YR 3/3	Dark Brown Silty Loam	NCM
S0 W150	3	B	16	23	10YR 5/6	Yellowish Brown Sandy Clay Loam	NCM; water saturated
S1	1	Fill	0	6	10YR 3/4	DK YL BN Coarse sand	Beach deposit; redeposited
S1	2	Fill	6	18	10YR 3/4	Dark Yellowish Brown Clayey Loam FILL	
S1	3	Fill	18	24	10YR 3/4	Dark Yellowish Brown Clayey Loam FILL	With concrete chunks

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
S2	1	Fill	0	24	10YR 3/4	Dark Yellowish Brown Clayey Loam FILL	Safety glass
S3	1	Fill	0	12	10YR 2/2	Very Dark Brown Silty Loam	Near wetland. Appears disturbed
S3	2	Fill	12	20	7.5YR 4/6	Strong Brown Silty Clayey Loam	Sewar pipe frags, metal spike
S4	1	A	0	8	10YR 3/2	Very Dark Grayish Brown Silty sandy Loam w gvl	ceramics and glass frags
S4	2	B	8	18	7.5YR 4/6	Strong Brown Silty Clayey Loam	Vy dense and compact
S5	1	A	0	5	10YR 3/2	Very Dark Grayish Brown Silty sandy Loam w gvl	20' west of Joune; safety glass frags
S5	2	B	5	16	7.5YR 4/6	Strong Brown Silty Clayey Loam	
S6	1	A	0	9	10YR 3/4	dark yl bn si cl lm	loose; plastic refuse
S6	2	B	9	16	7.5YR 5/6	Strong Brown Silty Clayey Loam	natural? Vy wet
S7	1	A	0	3	10YR 4/3	brown si cl lm	
S7	2	B	3	9	10YR 4/6	strong brown si cl lm	
S7	3	C	9	17	2.5YR 4/6	red si cl w rock	
S8	1	A	0	9	10YR 3/4	dark yl brown si sa lm	
S8	2	B	9	22	10YR 5/6	strong brown si sa lm	hvy roots
S9	1	A	0	9	10YR 3/4	dark yl brown si sa lm	
S9	2	B	9	24	10YR 5/6	strong brown si sa lm	hvy roots
W0 S0	1	AO	0	5	10YR 3/6	Dark Yellowish Brown Gravelly Sandy Loam	NCM
W0 S0	2	A	5	12	10YR 3/4	Dark Yellowish Brown Gravelly Sandy Clay	
W0 S0	3	B	12	18	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM
W100 S0	1	AO	0	6	10YR 2/1	Black Sandy Loam	NCM
W100 S0	2	A	6	13	10YR 3/4	Dark Yellowish Brown Silty Clay	
W100 S0	3	B	13	23	10YR 5/6	Yellowish Brown Sandy Clay Loam	NCM
W100 S0	1	A	0	6	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W100 S0	2	A	6	15	10YR 3/4	Dark Yellowish Brown Silty Clay	amber bottle glass, not retained for analysis
W100 S100	1	AO	0	4	10YR 2/1	Black Sandy Loam	NCM
W100 S100	2	A	4	18	10YR 4/6	Dark Yellowish Brown Silty Coarse Sand	NCM
W100 S100	3	B	18	23	5YR 3/4	Reddish Brown Silty Coarse Sand	NCM
W100 S150	1	AO	0	3	10YR 2/1	Black Sandy Loam	NCM
W100 S150	2	A	3	22	10YR 4/6	Dark Yellowish Brown Silty Coarse Sand	NCM; pebbles
W100 S150	3	B	22	29	5YR 3/4	Reddish Brown Silty Coarse Sand	NCM
W100 S200	1	AO	0	3	10YR 2/1	Black Sandy Loam	NCM
W100 S200	2	A	3	23	10YR 4/6	Dark Yellowish Brown Silty Coarse Sand	NCM
W100 S250	1	AO	0	4	10YR 2/1	Black Sandy Loam	NCM
W100 S250	2	A	4	9	7.5YR 3/4	Dark Brown Coarse Sand	pebbles
W100 S250	3	A	9	15	7.5YR 3/2	Dark Brown Clay	possible buried A Horizon
W100 S250	4	B	15	18	10YR 3/6	Dark Yellowish Brown Silty Loam	possible buried A Horizon
W100 S250	5	C	18	21	10YR 5/6	Yellowish Brown Silty Clay	NCM; subsoil

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
W100 S300	1	AO	0	3	10YR 2/1	Black Sandy Loam	NCN
W100 S300	2	A	3	10	7.5YR 3/4	Dark Brown Coarse Sand	NCM
W100 S300	3	B	10	15	7.5YR 3/2	Dark Brown Clay	NCM
W100 S300	4	C	15	20	10YR 5/6	Yellowish Brown Silty Clay	NCM; subsoil
W100 S50	1	AO	0	9	10YR 2/1	Black Sandy Loam	NCN
W100 S50	2	A	9	12	10YR 3/3	Dark Brown Silty loam	NCM
W100 S50	3	B	12	17	10YR 6/3	Pale Brown Sandy Clay Loam	NCM; water table at 15" bgs
W150 S100	1	AO	0	3	10YR 2/1	Black Sandy Silt Loam	ceramic and possible shatter
W150 S100	2	A	3	14	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM; few gravels
W150 S100	3	B	14	22	10YR 4/6	Dark Yellowish Brown Sandy Clay	NCM
W150 S150	1	A	0	5	10YR 4/6	Dark Yellowish Brown Sandy Loam	NCM; redeposited soils; drainage ditch south of shovel test
W150 S150	2	A	5	20	10YR 3/3	Dark Brown Silty Loam	NCM; redeposited soils
W150 S150	3	B	20	26	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W150 S200	1	AO	0	4	10YR 2/1	Black Silty Loam	NCM
W150 S200	2	A	4	15	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W150 S200	3	B	15	20	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W150 S250	1	AO	0	7	10YR 2/1	Black Silty Loam	NCM
W150 S250	2	A	7	15	10YR 3/4	Dark Yellowish Brown Silty Clay	NCM
W150 S250	3	B	15	20	10YR 5/4	Yellowish Brown Silty Clay Loam	NCM
W150 S300	1	AO	0	11	10YR 2/1	Black Sandy Loam	NCM
W150 S300	2	A	11	16	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W150 S300	3	B	16	20	10YR 5/4	Yellowish Brown Silty Clay Loam	NCM; water saturated
W150 S50	1	AO	0	5	10YR 2/1	Black Sandy Silt Loam	NCM
W150 S50	2	A	5	13	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W150 S50	3	B	13	18	10YR 4/6	Dark Yellowish Brown Sandy Clay	NCM; water saturated
W190 S35	1	AO	0	6	10YR 2/1	Black Silty loam	NCM
W190 S35	2	A	6	12	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM; few rocks, gravels, cobbles
W190 S35	3	B	12	18	7.5YR 4/6	Strong Brown Clayey Loam	NCM; few rocks, gravels, cobbles
W195 S0	1	AO	0	4	10YR 2/1	Black Sandy Silt Loam	NCM; 5' east of W200 S0; tree #4 is 5.5' east
W195 S0	2	A	4	15	10YR 3/6	Dark Yellowish Brown Silty Clay Loam	NCM
W195 S0	3	B	15	23	10YR 5/6	Yellowish Brown Clayey Loam	NCM
W195 S35	1	AO	0	3	10YR 2/1	Black Silty loam	NCM
W195 S35	2	A	3	12	10YR 3/6	Dark Yellowish Brown Clayey Loam	NCM
W195 S35	3	B	12	17	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W195 S9	1	AO	0	4	10YR 2/2	Very Dark Brown Silty Loam	NCM
W195 S9	2	A	4	12	10YR 3/4	Dark Yellowish Brown Clayey Loam	NCM

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
W195 S9	3	B	12	20	10YR 4/6	Dark Yellowish Brown Silty Clay	NCM
W200 N5	1	AO	0	4	10YR 2/2	Very Dark Brown Silty Loam	clear bottle glass (NR)
W200 N5	2	A	4	12	10YR 4/6 and 10YR 3/6	Dark Yellowish Brown Silty Clay	NCM; mixed fill
W200 N5	3	B	12	20	10YR 3/4	Dark Yellowish Brown Silty Clay	NCM
W200 S0	1	AO	0	9	10YR 2/1	Black Silty Loam	jasper flake, bottom of level 1
W200 S0	2	A	9	12	10YR 3/4	Dark Yellowish Brown Silty Clay	NCM
W200 S0	3	B	12	22	10YR 4/6	Dark Yellowish Brown Clay Loam	NCM; water saturated
W200 S10	1	AO	0	5	10YR 2/1	Black Silty Loam	glass, beer bottle frags (NR)
W200 S10	2	A	5	12	10YR 3/6	Dark Yellowish Brown Clayey Loam	NCM
W200 S10	3	B	12	20	10YR 5/8	Yellowish Brown Silty Clay Loam	NCM
W200 S100	1	AO	0	5	10YR 2/1	Black Sandy Loam	NCM
W200 S100	2	A	5	14	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W200 S100	3	B	14	22	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W200 S150	1	AO	0	8	10YR 2/1	Black Sandy Loam	NCM
W200 S150	2	A	8	13	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W200 S150	3	B	13	21	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W200 S200	1	AO	0	5	10YR 2/1	Black Sandy Loam	NCM
W200 S200	2	A	5	15	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W200 S200	3	B	15	22	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W200 S25	1	AO	0	4	10YR 2/2	Very Dark Brown Silty Loam	NCM
W200 S25	2	A	4	13	10YR 3/4	Dark Yellowish Brown Clayey Loam	possible shatter
W200 S25	3	B	13	19	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W200 S250	1	AO	0	3	10YR 2/1	Black Silty Loam	NCM; offset 7' south
W200 S250	2	A	3	14	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W200 S250	3	B	14	22	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W200 S300	1	AO	0	3	10YR 2/1	Black Sandy Loam	NCM
W200 S300	2	A	3	17	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W200 S300	3	B	17	23	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W200 S35	1	AO	0	6	10YR 2/1	Black Silty loam	NCM
W200 S35	2	A	6	16	10YR 4/4	Dark Yellowish Brown Clayey Loam	NCM
W200 S35	3	B	16	20	10YR 5/8	Yellowish Brown Silty Clay Loam	NCM
W200 S50	1	AO	0	9	10YR 2/1	Black Silty Loam	NCM
W200 S50	2	A	9	13	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W200 S50	3	B	13	19	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W205 S0	1	AO	0	4	10YR 2/2	Very Dark Brown Silty Loam	NCM
W205 S0	2	A	4	15	10YR 3/3	Dark Brown Silty Clay	brick frag and whiteware (NR)

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
W205 S0	3	B	15	17	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W205 S25	1	AO	0	3	10YR 2/1	Black Silty loam	NCM
W205 S25	2	A	3	12	10YR 3/4	Dark Yellowish Brown Clayey Loam	possible flake
W205 S25	3	B	12	17	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W210 S0	1	AO	0	10	10YR 2/2	Very Dark Brown Sandy Silt Clay	trash dumping; household waste (brick, plastic, glass, tin foil, tile) not retained
W210 S0	2	A	10	15	7.5YR 4/6	Strong Brown Sandy Silty Clay	NCM
W210 S0	3	B	15	23	10YR 3/4	Dark Yellowish Brown Sandy Clay Loam	artifacts from first natural layer
W210 S0	4	C	23	28	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W250 S0	1	Fill	0	9	10YR 2/1	Black Sandy Loam	possibly in area of ground depression
W250 S0	2	Fill	9	14	10YR 5/8	Yellowish Brown Silty Clay	
W250 S0	3	A	14	23	10YR 3/3	Dark Brown Silty Clay	NCM
W250 S0	4	B	23	28	10YR 5/3	Brown Clay Loam	NCM; water saturated
W250 S0	2	A	7	12	10YR 3/6	Dark Yellowish Brown Loamy Clay	
W250 S100	1	AO	0	8	10YR 2/1	Black Sandy Loam	fill deposits, similar to W300/S0 and W250/S50
W250 S100	2	A	8	13	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W250 S100	3	B	13	21	10YR 4/3	Brown Loamy Clay	NCM; possibly old road or pathway; BOE is at top of subsoil
W250 S150	1	AO	0	8	10YR 2/1	Black Sandy Loam	bottle glass frags, not retained for analysis
W250 S150	2	A	8	15	10YR 3/6	Dark Yellowish Brown Loamy Clay	NCM
W250 S150	3	B	15	21	10YR 4/3	Brown Loamy Clay	NCM
W250 S200	1	AO	0	8	10YR 2/1	Black Silty Loam	NCM; stoney
W250 S200	2	A	8	19	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM; upper part of level is stoney
W250 S200	3	B	19	24	7.5YR 4/6	Strong Brown Silty Clay	NCM; natural marine deposit
W250 S250	1	AO	0	5	10YR 2/1	Black Silty Loam	NCM
W250 S250	2	A	5	12	10YR 3/6	Dark Yellowish Brown Sandy Clay	NCM
W250 S250	3	B	12	20	10YR 4/3	Brown Sandy Clay Loam	NCM
W250 S300	1	A	0	8	10YR 2/1	Black Silty Loam	modern light bulb frag, not retained for analysis
W250 S300	2	B	8	13	7.5YR 4/6	Sandy Clay Loam	NCM
W250 S50	1	AO	0	7	10YR 2/1	Black Sandy loam	area is disturbrd, concrete slabs north and east of shovel test
W300 S0	1	AO	0	10	10YR 2/2	Very Dark Brown Sandy Loam	
W300 S0	2	A	10	18	10YR 3/6	Dark Yellowish Brown Silty Clay	NCM
W300 S0	3	B	18	26	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	NCM

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
W300 S100	1	AO	0	6	10YR 2/1	Black Sandy Loam	
W300 S100	2	A	6	18	10YR 3/6	Dark Yellowish Brown Silty Clay	flake
W300 S100	3	B	18	24	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W300 S150	1	AO	0	10	10YR 2/1	Black Silty Loam	
W300 S150	2	A	10	16	10YR 3/6	Dark Yellowish Brown Sandy Silty Clay	
W300 S150	3	B	16	23	7.5YR 4/6	Strong Brown Sandy Clay Loam	NCM
W300 S200	1	AO	0	8	10YR 2/1	Black Silty Loam	NCM
W300 S200	2	A	8	16	10YR 4/6	Dark Yellowish Brown Silty Clay	NCM
W300 S200	3	B	16	23	10YR 5/6	Yellowish Brown Clay Loam	NCM
W300 S250	1	A	0	7	10YR 2/1	Black Silty Loam	NCM
W300 S250	2	B	7	19	10YR 4/6	Dark Yellowish Brown Sandy Silty Clay	NCM
W300 S300	1	AO	0	8	10YR 2/1	Black Sandy Loam	
W300 S300	2	A	8	15	7.5YR 4/6	Strong Brown Sand	NCM; pebbles, gravels
W300 S300	3	B	15	21	10YR 3/6	Dark Yellowish Brown Clay Loam	NCM; clay pockets
W300 S50	1	A0	0	4	10YR 2/1	Black Sandy Loam	NCM
W300 S50	2	A	4	10	10YR 3/4	Dark Yellowish Brown Silty Clay	NCM; same color as level 3; contains red weathered and fragmented rock deposits
W300 S50	3	A	10	16	10YR 3/4	Dark Yellowish Brown Silty Clay	NCM
W300 S50	4	B	16	22	10YR 4/6	Dark Yellowish Brown Silty Clay Loam	NCM
W50 S0	3	B	15	20	10YR 4/6	Dark Yellowish Brown Sandy Clay Loam	amber bottle glass, not retained for analysis
W50 S100	1	AO	0	5	10YR 2/1	Black Sandy Loam	NCM
W50 S100	2	A	5	20	10YR 4/6	Dark Yellowish Brown Coarse Sand	possible shatter, jasper
W50 S100	3	B	20	26	7.5YR 3/4	Dark Brown Coarse Sand	NCM
W50 S150	1	AO	0	2	10YR 2/1	Black Loamy Sand	NCM
W50 S150	2	A	2	10	10YR 3/3	Dark Brown Sandy Silt Loam	NCM
W50 S150	3	B	10	12	10YR 2/1	Black Silty Loam	NCM
W50 S150	4	C	12	23	10YR 3/3	Dark Brown Coarse Sand	NCM; silt
W50 S200	1	AO	0	9	10YR 2/2	Very Dark Brown Loamy Sand	NCM
W50 S200	2	A	9	19	7.5YR 4/6	Strong Brown Coarse Sand	NCM
W50 S200	3	B	19	23	10YR 5/6	Yellowish Brown Coarse Sand	NCM
W50 S250	1	AO	0	5	10YR 2/2	Very Dark Brown Loamy Sand	NCM; shovel test is on a mound or area of higher elevation than to the west
W50 S250	2	A	5	11	10YR 3/6	Dark Yellowish Brown Sandy Silt	NCM; 2 10YR 2/1 black silty loam strata at 7-8" and 10-11" bgs
W50 S250	3	B	11	23	7.5YR 3/4	Dark Brown Coarse Sand	NCM
W50 S300	1	AO	0	7	10YR 2/1	Black Sandy Silt Loam	NCM

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Excavation Record

Location	Level	Stratum	Opening Depth	Closing Depth	Soil Color	Description	Comment
W50 S300	2	A	7	16	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM; pebbles
W50 S300	3	B	16	22	5YR 3/4	Reddish Brown Coarse Sand	NCM
W50 S50	1	AO	0	5	10YR 2/1	Black Sandy Loam	NCM
W50 S50	2	B	5	22	10YR 4/6	Dark Yellowish Brown Coarse Sand	NCM

Appendix B:
Artifact Inventory



Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Artifact Catalogue

X	Y	Level	Group	Type	Object	Material/ Ware/ Glass Color	Count	Comments
E150	S100	2	Household Glass		Unident	Glass	2	Clear
E150	S250	1	Household Ceramics		Tile	Redware	1	white and pink striped decoration
E150	S250	1	Household Ceramics		Unident	Ironstone	1	
E150	S250	1	Unident		Unident	Plastic	4	
E200	S0	1	Household Ceramics		Unident	Buff Earthenware	1	
E200	S0	1	Household Glass		Bottle	Glass	3	Amber
E200	S0	1	Unident		Unident	Plastic	2	
E200	S250	1	Household Glass		Unident	Glass	2	Aqua
E300	S150	2	Household Glass		Unident	Glass	1	Clear; possible tumbler
E450	S150	2	Household Glass		Unident	Glass	5	Clear
E450	S150	1	Unident		Straw	Plastic	1	
E50	S0	1	Household Glass		Bottle	Glass	1	Clear; embossed "10 0..."
E50	S0	1	Household Glass		Unident	Glass	12	Aqua
E50	S0	2	Household Glass		Unident	Glass	3	Aqua
E50	S0	1	Household Glass		Unident	Glass	5	Clear
E50	S100	1	Household Glass		Bottle	Glass	2	Green
E50	S100	2	Household Glass		Unident	Glass	1	Clear
E50	S50	1	Household Glass		Bottle	Glass	4	Green
S4		1	Household Ceramics		Unident	Whiteware	2	
S4		1	Household Glass		Unident	Glass	2	
W0	S0	2	Household Ceramics		Tile	Coarse	2	Amber
W0	S0	2	Household Ceramics		Unident	Buff Earthenware	1	Clear
W100	S0	2	Household Glass		Bottle	Glass	2	Clear
W100	S0	2	Household Glass		Unident	Glass	1	Mirror
W100	S0	2	Household Glass		Unident	Glass	1	
W100	S0	2	Household Glass		Unident	Glass	1	Amber
W100	S200	2	Faunal	Mollusk	Oyster	Shell	5	Clear
W100	S200	2	Household Glass		Unident	Glass	2	
W100	S200	2	Household Glass		Unident	Glass	1	
								Possible flake; 2 to 3 CM; no cortex; possible flakes scars; possible striking platform but no bulb of percussion; possible flake scars; possibly a flake
W100	S200	2	Unident		Unident	Plastic	3	fragment
W150	S100	2	Unident		Unident	Plastic	3	Amber
								Possible flake/shatter; 2 to 3 CM; irregular shapes; no flake scars; no bulb;
W200	S0	1	Lithic	Lithic	Flake	Jasper	1	probably natural possible flake; 0.5 to 1 CM; no flake
W200	S0	2	Household Glass		Bottle	Glass	1	scars; no bulb
W200	S25	2	Lithic	Lithic	Flake/Shatter	Chert	2	Green
W205	S25	2	Lithic	Lithic	Flake	Chert	1	
W210	S0	3	Household Glass		Bottle	Glass	1	
W250	S0	1	Architectural	Fastener	Nail	Corroded Metal	1	
W250	S0	1	Faunal	Mollusk	Clam	Shell	1	
W250	S0	1	Faunal	Mollusk	Oyster	Shell	3	white and pink striped decoration
W250	S0	1	Household Ceramics		Tile	Coarse	2	white and pink striped decoration
W250	S0	1	Household Ceramics		Tile	Redware	9	white and pink striped decoration
W250	S0	2	Household Ceramics		Tile	Redware	15	Rim fragment
W250	S0	2	Household Ceramics		Tile	Redware	3	Amber
W250	S0	1	Household Ceramics		Unident	Whiteware	1	Amber
W250	S0	1	Household Glass		Bottle	Glass	4	Amber
W250	S0	2	Household Glass		Bottle	Glass	9	Green
W250	S0	2	Household Glass		Bottle	Glass	2	
W250	S0	1	Household Glass		Bottle	Glass	1	Natural; discarded
W250	S0	1	Household Glass		Unident	Glass	2	
W250	S0	2	Natural		Natural	Stone	0	Aqua
W250	S100	1	Faunal	Mollusk	Unident	Shell	17	Clear
W250	S100	1	Household Glass		Unident	Glass	2	Amber; embossed design
W250	S100	1	Household Glass		Unident	Glass	3	Clear
W250		2	Household Glass		Bottle	Glass	2	white and pink striped decoration

Tottenville Shoreline Coastal and Social Resiliency Initiatives—Phase 1B Archaeological Investigation Report
Artifact Catalogue

X	Y	Level	Group	Type	Object	Material/ Ware/ Glass Color	Count	Comments
W250		2	Household Glass		Unident	Glass	3	Amber
W300	S0	1	Household Ceramics		Tile	Redware	1	Clear
W300	S0	1	Household Glass		Bottle	Glass	1	Aqua
W300	S0	1	Household Glass		Bottle	Glass	1	light blue decoration; spall Possible flake; 1 to 2 CM; irregular on
W300	S0	1	Household Glass		Unident	Glass	4	both faces; no bulb
W300	S100	1	Household Ceramics		Unident	Whiteware	2	
W300	S100	2	Lithic	Lithic	Flake	Chert	1	Milk glass
W300	S100	2	Unident		Unident	Plastic	1	possible shatter; 2 to 3 CM; water rounded edges; weathered; very likely
W300	S150	2	Household Glass		Unident	Glass	1	natural
W300	S150	2	Unident		Unident	Plastic	1	
W50	S100	2	Lithic	Lithic	Shatter	Jasper	0	
W50	S150	1	Unident		Unident	Corroded Metal	2	Amber
W50	S200	1	Faunal	Mollusk	Clam	Shell	5	undecorated
W50	S200	1	Household Glass		Bottle	Glass	1	Clear, window

Section 106 Correspondence





Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

January 10, 2019

Ms. Beth Cumming
Senior Historic Site Restoration Coordinator
New York State Office of Parks, Recreation and Historic Preservation
Bureau of Historic Preservation
Peebles Island, PO Box 189
Waterford, NY 12188-0189

Re: Coastal and Social Resiliency Initiatives for Tottenville Shoreline, Richmond County, NY): Submission of
Draft Phase 1B Archaeological Investigation Report
15PR00618

Dear Ms. Cumming:

The Governor's Office of Storm Recovery ("GOSR") is serving as the responsible entity under the National Environmental Policy Act ("NEPA") and the lead agency under the State Environmental Quality Review Act ("SEQRA"), and related laws, for the environmental review of the proposed Coastal and Social Resiliency Initiatives for Tottenville Shoreline Project (collectively, the "Proposed Actions"). The Final Environmental Impact Statement (FEIS) for the Proposed Actions was published in June 2018. GOSR issued a Joint Record of Decision (ROD) and Findings Statement in August 2018.

Pursuant to Section 106 and the terms of the 2013 Programmatic Agreement executed among FEMA, New York State Historic Preservation Office (SHPO), the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and ACHP, the final Revised Phase 1B Archaeological Testing Protocol/Work Plan was submitted to you for review and comment on November 19, 2018. The Phase 1B Archaeological Investigation has been completed and a draft of the report summarizing the investigation has been enclosed for your review. As you will see in the enclosed document, the testing did not result in the identification of archaeological sites and no additional archaeological analysis is being recommended at this time.

At this time, GOSR is seeking your comments on the enclosed Phase 1B Archaeological Testing report and requests concurrence or any comments within 30 days of the date of this letter. If you have any questions or would like to request any further information, please feel free to contact me at (212) 480-6265. Thank you for your consideration and cooperation.

Sincerely,

Matt Accardi
Assistant General Counsel

Enclosures: Draft Phase 1B Archaeological Investigation Report (January 2019)



Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

January 10, 2019

Ms. Gina Santucci
Director of Environmental Review
New York City Landmarks Preservation Commission
1 Centre Street, 9th floor
New York, NY 10007

Re: Coastal and Social Resiliency Initiatives for Tottenville Shoreline, Richmond County, NY): Submission of
Draft Phase 1B Archaeological Investigation Report
15PR00618

Dear Ms. Santucci:

The Governor's Office of Storm Recovery ("GOSR") is serving as the responsible entity under the National Environmental Policy Act ("NEPA") and the lead agency under the State Environmental Quality Review Act ("SEQRA"), and related laws, for the environmental review of the proposed Coastal and Social Resiliency Initiatives for Tottenville Shoreline Project (collectively, the "Proposed Actions"). The Final Environmental Impact Statement (FEIS) for the Proposed Actions was published in June 2018. GOSR issued a Joint Record of Decision (ROD) and Findings Statement in August 2018.

Pursuant to Section 106 and the terms of the 2013 Programmatic Agreement executed among FEMA, New York State Historic Preservation Office (SHPO), the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and ACHP, the final Revised Phase 1B Archaeological Testing Protocol/Work Plan was submitted to you for review and comment on November 19, 2018. The Phase 1B Archaeological Investigation has been completed and a draft of the report summarizing the investigation has been enclosed for your review. As you will see in the enclosed document, the testing did not result in the identification of archaeological sites and no additional archaeological analysis is being recommended at this time.

At this time, GOSR is seeking your comments on the enclosed Phase 1B Archaeological Testing report and requests concurrence or any comments within 30 days of the date of this letter. If you have any questions or would like to request any further information, please feel free to contact me at (212) 480-6265. Thank you for your consideration and cooperation.

Sincerely,

Matt Accardi
Assistant General Counsel

cc: Amanda Sutphin, LPC

Enclosures: Draft Phase 1B Archaeological Investigation Report (January 2019)



Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

January 10, 2019

Ms. Kim Penrod
Director, Cultural Resources/Section 106
Delaware Nation
P.O. Box 825
Anadarko, OK 73005
(Sent via e-mail)

Re: Coastal and Social Resiliency Initiatives for Tottenville Shoreline, Richmond County, NY):
Submission of Draft Phase 1B Archaeological Investigation Report
15PR00618

Dear Ms. Penrod:

The Governor's Office of Storm Recovery ("GOSR") is serving as the responsible entity under the National Environmental Policy Act ("NEPA") and the lead agency under the State Environmental Quality Review Act ("SEQRA"), and related laws, for the environmental review of the proposed Coastal and Social Resiliency Initiatives for Tottenville Shoreline Project (collectively, the "Proposed Actions"). The Final Environmental Impact Statement (FEIS) for the Proposed Actions was published in June 2018. GOSR issued a Joint Record of Decision (ROD) and Findings Statement in August 2018.

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would like to request any further information, please feel free to contact me at (212) 480-6265. Thank you for your consideration and cooperation.

Sincerely,



Matt Accardi
Assistant General Counsel

cc: Kerry Holton, President, Delaware Nation
Nekole Alligood, NAGPRA, Delaware Nation (via e-mail)
Corey Smith, Cultural Preservation Assistant Director, Delaware Nation (via e-mail)
Jason Ross, Section 106 Manager, Delaware Nation (via e-mail)
Diane Butler-Wolfe, Assistant Administrator, Delaware Nation (via e-mail)

Enclosures: Draft Phase 1B Archaeological Investigation Report (January 2019)



Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

January 10, 2019

Chief Chet Brooks
Delaware Tribe of Indians
Delaware Tribal Headquarters
5100 Tuxedo Blvd
Bartlesville, OK 74006
(Sent via UPS)

Re: Coastal and Social Resiliency Initiatives for Tottenville Shoreline, Richmond County, NY): Submission of
Draft Phase 1B Archaeological Investigation Report
15PR00618

Dear Mr. Brooks:

The Governor's Office of Storm Recovery ("GOSR") is serving as the responsible entity under the National Environmental Policy Act ("NEPA") and the lead agency under the State Environmental Quality Review Act ("SEQRA"), and related laws, for the environmental review of the proposed Coastal and Social Resiliency Initiatives for Tottenville Shoreline Project (collectively, the "Proposed Actions"). The Final Environmental Impact Statement (FEIS) for the Proposed Actions was published in June 2018. GOSR issued a Joint Record of Decision (ROD) and Findings Statement in August 2018.

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Sincerely,

Matt Accardi
Assistant General Counsel

cc: Susan Bachor, Historic Preservation Representative (via email)

Enclosures: Draft Phase 1B Archaeological Investigation Report (January 2019)



Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

January 10, 2019

Mr. Charles Smith
Chairman
Shinnecock Nation
P.O. Box 5006
Southampton, NY 11969
(Sent via USPS)

Re: Coastal and Social Resiliency Initiatives for Tottenville Shoreline, Richmond County, NY): Submission of
Draft Phase 1B Archaeological Investigation Report, 15PR00618

Dear Chairman Smith:

The Governor's Office of Storm Recovery ("GOSR") is serving as the responsible entity under the National Environmental Policy Act ("NEPA") and the lead agency under the State Environmental Quality Review Act ("SEQRA"), and related laws, for the environmental review of the proposed Coastal and Social Resiliency Initiatives for Tottenville Shoreline Project (collectively, the "Proposed Actions"). The Final Environmental Impact Statement (FEIS) for the Proposed Actions was published in June 2018. GOSR issued a Joint Record of Decision (ROD) and Findings Statement in August 2018.

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Sincerely,

Matt Accardi
Assistant General Counsel

cc: David Martine, THPO, Cultural Resources Department (by email)

Enclosures: Draft Phase 1B Archaeological Investigation Report (January 2019)



Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

January 10, 2019

Ms. Bonney Hartley
THPO
Stockbridge-Munsee Community Band of Mohicans
37 1st Street
Troy, NY
(sent via email)

Re: Coastal and Social Resiliency Initiatives for Tottenville Shoreline, Richmond County, NY): Submission of Draft Phase 1B Archaeological Investigation Report, 15PR00618

Dear Ms. Hartley:

The Governor's Office of Storm Recovery ("GOSR") is serving as the responsible entity under the National Environmental Policy Act ("NEPA") and the lead agency under the State Environmental Quality Review Act ("SEQRA"), and related laws, for the environmental review of the proposed Coastal and Social Resiliency Initiatives for Tottenville Shoreline Project (collectively, the "Proposed Actions"). The Final Environmental Impact Statement (FEIS) for the Proposed Actions was published in June 2018. GOSR issued a Joint Record of Decision (ROD) and Findings Statement in August 2018.

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Sincerely,

Matt Accardi
Assistant General Counsel

cc: Ms. Shannon Holsey, President, Stockbridge-Munsee Community Band of Mohicans (sent via USPS)

Enclosures: Draft Phase 1B Archaeological Investigation Report (January 2019)



Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

January 17, 2019

Mr. Matt Accardi
Assistant General Counsel
Governor's Office of Storm Recovery, Bureau of Environmental Review and Assessment
25 Beaver Street, 5th Floor
New York, NY 10004

Re: GOSR
GOSR-Tottenville Shoreline, Staten Island
Borough of Staten Island, Richmond County, NY
15PR00618

Dear Mr. Accardi:

Thank you for continuing to consult with the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources.

SHPO has reviewed *Coastal and Social Resiliency Initiatives for the Tottenville Shoreline, Staten Island, Richmond County, New York, Phase 1B Archaeological Investigation Technical Report* (AKRF, January 2019).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking. This recommendation pertains only to the Area of Potential Effects (APE) examined during the above-referenced investigation. It is not applicable to any other portion of the project property. Should the project design be changed SHPO recommends further consultation with this office. If you have questions, I can be reached at (518)268-2182.

Sincerely,

Olivia Brazee
Historic Site Restoration Coordinator
olivia.brazee@parks.ny.gov

via e-mail only

cc: Mary Barthelme
Amanda Sutphin, LPC
Daniel Pagano, LPC
Gina Santucci, LPC
Amy Diehl Crader, AKRF
Claudia Cooney, AKRF
Elizabeth Meade, AKRF
JoLayne Morneau, AKRF

ARCHAEOLOGY

Final Sign-Off (Multiple Sites)

Project number: GOVERNOR OFFICE STORM RECOVERY / 15OSR001R
Project: LIVING BREAKWATERS AND TOTTEVILLE DUNE PROJECTS
Date received: 1/7/2019

Comments: as indicated below. Properties that are individually LPC designated or in LPC historic districts require permits from the LPC Preservation department. Properties that are S/NR listed or S/NR eligible require consultation with SHPO if there are State or Federal permits or funding required as part of the action.

This document only contains Archaeological review findings. If your request also requires Architecture review, the findings from that review will come in a separate document.

The LPC is in receipt of the, "Phase IB Archaeological Investigation Technical Report for the Coastal and Social Resiliency Initiatives for the Tottenville Shoreline, Staten Island, New York," prepared by AKRF, Inc and dated January 2019. The LPC concurs with the report's findings that there are no further concerns for the project area.

Please submit a bound copy of the report to the LPC for our archives.

Cc: NYSHPO



1/18/2019

SIGNATURE
Amanda Sutphin, Director of Archaeology

DATE

File Name: 30215_FSO_ALS_01182019.doc

From: Bonney Hartley <Bonney.Hartley@mohican-nsn.gov>
Sent: Wednesday, January 16, 2019 1:06 PM
To: Accardi, Matt (STORMRECOVERY)
Cc: Shirley, Lori (NYSHCR); Shannon Holsey
Subject: RE: Tottenville Shoreline Section 106 Consultation: Draft Phase 1B Report

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Hello Matt,

I have reviewed on behalf of Stockbridge-Munsee and would like to state a determination of “no adverse effect” to historic properties based on the lack of archaeological findings for this undertaking.

In the event of inadvertent discoveries during construction, or if project designs change, please reach out to reopen consultation.

Kindly,

Bonney

Bonney Hartley

Tribal Historic Preservation Officer

Stockbridge-Munsee Mohican Tribal Historic Preservation

Extension office

[65 1st Street](#)